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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/653,583	08/31/2000	Yoshiro Mikami	503.35282CX2	6649

20457 7590 06/13/2007
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EXAMINER

PIZIALI, JEFFREY J

ART UNIT	PAPER NUMBER
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2629

NOTIFICATION DATE	DELIVERY MODE
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06/13/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

09/653,583

Applicant(s)

MIKAMI ET AL.

Examiner

Jeff Piziali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2007 and 17 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6,9,23,24 and 27-45 is/are pending in the application.
- 4a) Of the above claim(s) 9,23,24,32-35 and 37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6,27-31,36 and 38-45 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 August 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 08/820,835.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copy has been filed in parent Application No. 08/820,835, filed on 19 March 1997.

Terminal Disclaimer

2. The terminal disclaimer filed on 29 January 2003 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of U.S. Patent No. 6,115,017 has been reviewed and is accepted. The terminal disclaimer has been recorded.

Election/Restrictions

3. Applicants' election with traverse of Species I, Sub-Species A, Sub-Sub-Species 1 (i.e., claims 6, 27-31, 36, and 38-45) in the reply filed on 23 March 2007 is acknowledged. The traversal is on the ground(s) that, *"the requirement does not relate to the claimed invention or illustrated species. For example, independent claim 6 and dependent claim 27, the only claims, which the Examiner considers to be properly under consideration, are written in an alternative format that either the drain or the source is connected to the corresponding signal electrode, a capacitor is at least partially formed by a portion of either the drain or the source of the thin film transistor, and that one electrode of the capacitor is formed of a same material as a material of either the drain or the source of the thin film transistor. The claims do not specify the drain or*

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the source, as required by the Examiner in terms of the Species, Sub-Species and Sub-Sub-Species. Thus, claims 6 and 27 are generic claims" (see Page 10 of the 'Amendment' filed 23 March 2007).

This is not found persuasive, because the species are independent or distinct because claims to the different species recite the mutually exclusive characteristics (e.g., transistor drain or alternately source connections and material compositions) of such species. In addition, these species are not obvious variants of each other based on the current record.

There is an examination and search burden for these patentably distinct species due to their mutually exclusive characteristics. The species require a different field of search (e.g., searching different classes/subclasses or electronic resources, or employing different search queries); and/or the prior art applicable to one species would not likely be applicable to another species; and/or the species are likely to raise different non-prior art issues under 35 U.S.C. 101 and/or 35 U.S.C. 112, first paragraph.

The requirement is still deemed proper and is therefore made FINAL.

4. Claims 9, 23, 24, 32-35, and 37 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected species, sub-species, and/or sub-sub-species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 23 March 2007.

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5. This application contains claims 9, 23, 24, 32-35, and 37 drawn to an invention nonelected with traverse the replies filed on 23 March 2007 and 28 November 2006. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

6. Applicants are reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 6, 27-31, 36, and 38-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Hamada et al (US 5,194,974)* in view of *Matsuda et al (US 5,352,907)*.

Regarding claim 6, Hamada discloses a liquid crystal display apparatus (see the abstract), having a pair of substrates of which at least one substrate is transparent (see Column 6, Line 15) and a liquid crystal layer sandwiched between the substrates (see Column 1, Lines 20-21), comprising: a plurality of scanning electrodes [Fig. 4; Y] formed on one of the substrates (see

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Column 5, Line 55); and a plurality of signal electrodes [Fig. 4; X] intersecting in a matrix form with said plurality of scanning electrodes (see Figure 2 and Column 5, Line 54); wherein the display apparatus further comprises, within each of the regions surrounded by said plurality of scanning electrodes and said plurality of signal electrodes: (a) a display data holding circuit [Fig. 4; TFT1 and C1] connected to a corresponding scanning electrode [Fig. 4; Y₁] and signal electrode [Fig. 4; X₁], for fetching and storing display data from a signal electrode in response to a scanning signal (see Column 6, Lines 54-55) for holding a display image [in C1] without updating the display data [in C2] while a power supply [Fig. 4; V_c] to the display apparatus is maintained (see Column 6, Lines 59-65); (b) a switching device [Fig. 4; TFT2] connected to said display data holding circuit and having a switching operation thereof controlled by the display data holding circuit (see Column 6, Lines 59-65); and (c) a display electrode [Fig. 4; C2] connected to said switching device (see Column 5, Lines 66-68); wherein said display data holding circuit includes a thin film transistor [Fig. 4; TFT1] having a gate connected to the corresponding scanning electrode and one of a drain and a source connected to the corresponding signal electrode, and a capacitor [Fig. 4; C1] at least partially formed by a portion of one of the drain and the source of said thin film transistor (see Column 5, Lines 53-65 and Column 7, Line 38 - Column 8, Line 45).

Hamada does not expressly disclose the display data holding circuit having one of a coplanar and an inverse stagger structure.

However, Matsuda et al. discloses thin film transistor circuits of a coplanar as well as an inverse stagger structure (see Column 1, Lines 49-54).

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Hamada and Matsuda are analogous art because they are from the shared inventive field of using thin film transistor circuits for controlling liquid crystal elements.

Therefore, it would have been obvious to one skilled in the art at the time of invention to use Matsuda's coplanar or inverse stagger structure with Hamada's display data holding circuit, so as to manufacture the liquid crystal display apparatus with conventional, well known TFT design techniques (see Matsuda: Column 1, Lines 49-54).

Regarding claim 27, Hamada discloses one electrode of the capacitor is formed of a same material as a material of one of the drain and the source of said thin film transistor (see Fig. 4; Column 7, Line 38 - Column 8, Line 45).

Regarding claim 28, Hamada discloses the drain of the thin film transistor of the display data holding circuit is connected to the corresponding signal electrode (see Fig. 4; Column 7, Line 38 - Column 8, Line 45).

Regarding claim 29, Hamada discloses the capacitor of said display data holding circuit is at least partially formed by a portion of the drain of said thin film transistor (see Fig. 4; Column 7, Line 38 - Column 8, Line 45).

Regarding claim 30, this claim is rejected by the reasoning applied in rejecting claims 28 and 29.

Regarding claim 31, Hamada discloses one electrode of the capacitor is formed of a same material as a material of the drain of said thin film transistor (see Fig. 4; Column 7, Line 38 - Column 8, Line 45).

Regarding claim 36, this claim is rejected by the reasoning applied in rejecting claim 31.

Regarding claim 38, this claim is rejected by the reasoning applied in rejecting claim 6; furthermore, Hamada discloses at least one of (a) said display data holding circuit [Fig. 4; TFT1 and C1] includes a thin film transistor [Fig. 4; TFT1] having a gate connected to the corresponding scanning electrode [Fig. 4; Y₁] and one of a drain and a source connected to the corresponding signal electrode [Fig. 4; X₁], and at least one (i) of a capacitor [Fig. 4; C1] at least partially formed by a portion of one of the drain and the source of said thin film transistor and (ii) a static memory circuit connected to the other of the drain and the source of said thin film transistor, the static memory circuit including a plurality of thin film transistors, and (b) said display electrode is an opaque reflection electrode arranged in overlapping relation with at least one of said scanning electrode, said signal electrode, and a thin film transistor for enabling driving of the liquid crystal display apparatus in a reflection type display mode (see Column 7, Line 38 - Column 8, Line 45).

Regarding claim 39, Hamada discloses said display data holding circuit which includes a thin film transistor [Fig. 4; TFT1] having a gate connected to the corresponding scanning electrode [Fig. 4; Y₁] and one of a drain and a source connected to the corresponding signal

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electrode [Fig. 4; X₁] is provided, and a capacitor [Fig. 4; C₁] is provided which is at least partially formed by a portion of one of the drain and the source of said thin film transistor (see Column 7, Line 38 - Column 8, Line 45).

Regarding claim 40, this claim is rejected by the reasoning applied in rejecting claim 28.

Regarding claim 41, this claim is rejected by the reasoning applied in rejecting claim 29.

Regarding claim 42, this claim is rejected by the reasoning applied in rejecting claims 28 and 29.

Regarding claim 43, this claim is rejected by the reasoning applied in rejecting claim 31.

Regarding claim 44, this claim is rejected by the reasoning applied in rejecting claim 27.

Regarding claim 45, this claim is rejected by the reasoning applied in rejecting claim 31.

Response to Arguments

9. Applicants' arguments filed 17 May 2004 have been fully considered but they are not persuasive.

Firstly, the applicants contend, "*discloses a display data holding circuit connected to a corresponding scanning electrode and signal electrode and having one of a coplanar and an inverse stagger structure. Rather, Matsuda et al merely discloses such type of structure for a thin-film transistor utilized in conjunction with a liquid crystal display device. Thus, applicants submit that the proposed combination of Matsuda et al and Hamada et al represents a hindsight reconstruction attempt utilizing the principle of 'obvious to try' which is not the standard of 35 U.S.C. 103*" (see Page 8 of the 'Amendment' filed 17 March 2004). However, the examiner respectfully disagrees.

In response to applicants' argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Additionally, the applicants contend, "*there is no disclosure in Hamada et al that a capacitor is at least partially formed by a portion of one of the drain and the source of the thin film transistor as recited in claim 6. Applicants note that Fig. 4 clearly illustrates that an electrode of the capacitor C_1 is separate from the drain or source of the thin film transistor, but*

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is electrically connected thereto by way of a wire connection. Moreover, the description at col. 6, lines 16-20 of Hamada et al in connection with Figs. 1 and 2 and the corresponding description at col. 7, lines 54-59 of Hamada et al, clearly evidences that the capacitor C_1 is not partially formed by a portion of one of the drain and the source of the thin film transistor TFT_1 . That is, as indicated in the aforementioned portions of Hamada et al, the source and drain of the thin film transistor TFT_1 is made of " n^+a -Si/Ti", whereas the capacitor C_1 is made of " $Ta/Ta_2O_5/SiN_x/Ti$ ". As is apparent, the makeup of the source and drain of TFT_1 and that of the capacitor C_1 differ from one another such that applicants submit that Hamada et al specifically discloses that the recited features of claim 6 are not provided thereby, and applicants submit that the recited features of claim 6 are contrary to the disclosure of Hamada et al" (see Page 9 of the 'Amendment' filed 17 March 2004). The applicants further contend Hamada neglects teaching, "the feature that one electrode of the capacitor is formed of a same material as a material of one of the drain and the source of said thin film transistor" (see Page 10 of the 'Amendment' filed 17 March 2004). However, the examiner respectfully disagrees.

An "electrode" is merely a synonym for a "conductor." As is clearly evidenced by Hamada's Figure 4, a capacitor [Fig. 4; C_1] is at least partially formed by a portion of one of the drain and the source of a thin film transistor [Fig. 4; TFT_1] (see Column 7, Line 38 - Column 8, Line 45). The thin film transistor [Fig. 4; TFT_1] is directly connected to the capacitor [Fig. 4; C_1], and as such, they share a conductor (aka an "electrode" of the same material) therebetween.

In response to applicants' argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicants rely (i.e., "*an island Si pattern of the TFT portions 10 and 11 are formed by patterning, and the resultant layers are*

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used as lower electrodes 54 of the sampling capacitor 11. As described, the sampling capacitor can be formed so as to incorporate the whole source region of the sampling TFT" -- see Page 9 of the 'Amendment' filed 17 March 2004) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

By such reasoning, rejection of the claims is deemed necessary, proper, and thereby maintained at this time.

Conclusion

10. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeff Piziali whose telephone number is (571) 272-7678. The examiner can normally be reached on Monday - Friday (6:30AM - 3PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on (571) 272-7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Jeff Piziali
31 May 2007